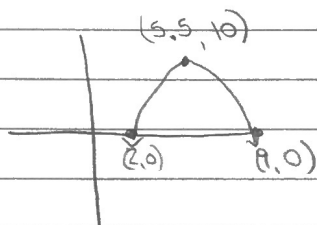


1) Graph $y = 2(x-3)^2 - 8$, then write the equation in factored & standard forms.

2) Graph $y = \frac{1}{2}(x+4)(x-6)$, then write the equation in vertex & standard forms.

3) Graph $y = x^2 - 8x + 12$, then write the equation in vertex & factored form.

4) Write the equation of the function below in all forms.



5) Factor $2x^2 - 6x - 8$

6) Factor $7x^2 + 23x + 6$

7) Solve for x : $\frac{1}{2}x^2 - 2x + 5 = 0$

8) Solve for x : $-3x^2 - 8x + 9 = 0$

9) Find the equation of a parabola with roots at $2 \pm \sqrt{11}$.

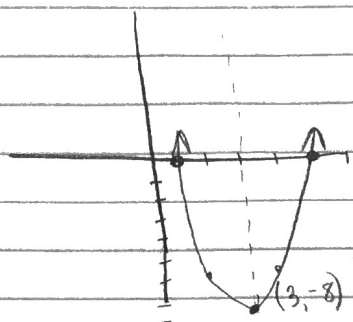
$$1) y = 2(x-3)^2 - 8$$

$$2(x-3)^2 = 8$$

$$(x-3)^2 = 4$$

$$x-3 = 2 \text{ or } x-3 = -2$$

$$x = 5 \text{ or } 1$$

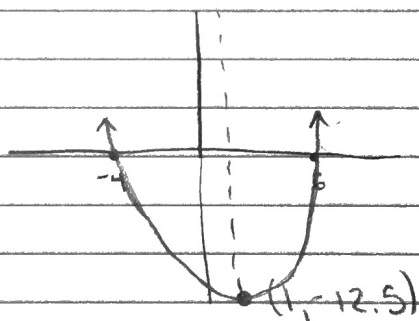


$$y = 2(x-5)(x-1)$$

$$y = 2x^2 - 12x + 10$$

$$2) y = \frac{1}{2}(x+4)(x-6)$$

$$\text{Vertex } (1, -12.5)$$



$$y = \frac{1}{2}(x-1)^2 - 12.5$$

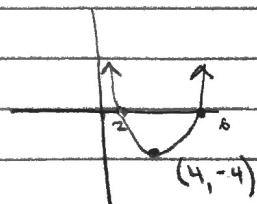
$$y = \frac{1}{2}x^2 + x - 12$$

$$3) y = x^2 - 8x + 12$$

$$\text{vertex} = \frac{8}{2}$$

$$= 4$$

$$(4, -4)$$



$$\text{factored } (x-2)(x-6)$$

$$y = (x-2)(x-6)$$

$$y = (x-4)^2 - 4$$

$$4) y = a(x-2)(x-9)$$

$$10 = a(5.5-2)(5.5-9)$$

$$10 = a(3.5)(-3.5)$$

$$10 = -\frac{49}{4}a$$

$$\frac{40}{49} = a$$

$$y = \frac{40}{49}(x-2)(x-9)$$

$$y = \frac{40}{49}(x-5.5)^2 + 10$$

$$y = \frac{40}{49}x^2 - 8\frac{48}{49}x + 14\frac{34}{49}$$

$$5) 2x^2 - 6x - 8$$

$$2x^2 + 2x - 8x - 8$$

$$2x(x+1) - 8(x+1)$$

$$(2x-8)(x+1)$$

$$6) 7x^2 + 23x + 6$$

$$7x^2 - 21x + 21x + 6$$

$$7x(x+3) + 2(x+3)$$

$$(7x+2)(x+3)$$

$$7) \frac{1}{2}x^2 - 2x + 5 = 0$$

$$x^2 + 4x + 10 = 0$$

$$x^2 + 4x = -10$$

$$(x+2)^2 = -10 + 4$$

$$(x+2)^2 = -6$$

$$x+2 = \pm i\sqrt{6}$$

$$x = -2 \pm i\sqrt{6}$$

$$8) -3x^2 - 8x + 9 = 0$$

$$x^2 + \frac{8}{3}x = 3$$

$$(x + \frac{4}{3})^2 = 3 + \frac{16}{9}$$

$$(x + \frac{4}{3})^2 = \frac{52}{9}$$

$$(x + \frac{4}{3})^2 = \pm \frac{2\sqrt{13}}{3}$$

$$x = \frac{-1 \pm 2\sqrt{13}}{3}$$

$$9) (x-2+\sqrt{11})(x-2-\sqrt{11})$$

$$x^2 - 2x - x\sqrt{11} - 2x + 4 + 2\sqrt{11} + x\sqrt{11} - 2\sqrt{11} - 11$$

$$x^2 - 4x - 7$$